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# The Tech News Volume 5, Issue 17, January 13 1914

The Students of Worcester Polytechnic Institute

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# TECH NEWS



VOL. 5, NO. 17

WORCESTER, MASS., JAN. 23, 1914

PRICE, SEVEN CENTS

## Tech Mixer Friday

SECOND ATTRACTION IS SCHUBERT  
QUARTETTE, AND READER  
INFORMAL DANCING

This Friday, January 16, the Y. M. C. A. offers the Schubert Quartette and Reader as the second Tech Mixer at the Electrical Engineering Lecture Hall. The Schubert Quartette of Boston is recognized as one of the foremost in this part of the country and will be a treat to all who are interested in vocal music. All who attended the first Mixer, and heard the Maurer Sisters are loud in their claims that the series is the best yet, so be sure that you are there Friday.

Following the policy to make the Mixers a greater opportunity for Tech men to become acquainted, it is planned to hold an informal dance immediately following the entertainment. There are a few more course tickets which may be had for 75 cents each and which include admission to the Schubert Quartette and the third entertainment, Miss Marjorie Lacey in "Everywoman." Single admissions for either Mixer may be bought at the door for 50 cents.

## RIFLE CLUB OPENS RANGE

TEAM SHOOT SCORE OF 892 AGAINST  
OREGON

The Rifle Club has made a good start, and the outlook is that it will soon be one of the strongest and most popular organizations on the Hill. (The membership jumped from 40 to 70 last week.) The range, which the executive committee completed after much hard labor, was opened for inspection last Monday, and on Tuesday the shooting commenced, the club having received its two new gallery guns and a goodly supply of ammunition. Practically every member shot once on Tuesday, Wednesday, or Thursday, and Thursday evening and Friday afternoon the twenty-five highest were tried out for the team.

On Friday night the first match, against Oregon Agricultural, was shot. Lieut. D. R. Nichols, N. R. A. Judge, measured the range and tested the guns, pronouncing everything all right. The team scored a total of 892, which is good considering the small amount of practice the men have had. Darling was well in the lead with 185, while Davidson and Smith were tied at 178 apiece. Fritch came in close behind with 177, while Leonard was the fifth man to qualify with 174. Watson, Mirick, Jealous, Bragdon, and Gay

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## SCHEDULE OF EXAMINATIONS

January 19th—January 24th, (Incl.), 1914.

ALL EXAMINATIONS COMMENCE AT 9.00 A. M. UNLESS OTHERWISE SPECIFIED.

MONDAY, JAN. 19

SENIOR	JUNIOR	SOPHOMORE	FRESHMAN
M. E. 42 (STM. ENG.) for M. M. E. Lec. Rm.	PHYSICS 3 (LAB.) for M. C. & Ch.	MATH. 3 (CALC.) for M. C. & E. Divs. A, B, D, F & G. in E. E. Lec. Rm. Div. C. Rm. 2 E. E. Bldg.	ENG. 1 Divs. A, B, C, & D. in Chapel. Divs. E, & F. in Prof. Coombs' Rec. Rms. Divs. G. & H. in Prof. Long's Rec. Rms.
C. E. 16 (MASONRY) for E. & C. 19 Boynton H.	PHYSICS 4 (LAB.) for E. Physics & Chem. Lec. Rms. & Physics Rec. Rms.	MATH. 5 (CALC.) for Ch. Div. E. Rm. 2 E. E. Bldg.	
CH. 13 (ADV. QT. ANAL.) for Ch. Chem. Rec. Rm.			

TUESDAY, JAN. 20

M. E. 37 (MECH.) for M. C. & E. E. Lec. Rm.	M. E. 35 (APP. MECH.) for M. C. & E. M. E. Lec. Rm.	C. E. 2 (SURV.) for M. E. & Senior Ch. M. in Phys. Lec. Rm. E. & Senior Ch. in Chem. Lec. Rm.	FRENCH 1 GERMAN 1 FRENCH 5 Divs. D, F, & G. In Prof. Coombs' Rec. Rm. Divs. E. & H. in Prof. Long's Rec. Rm. Divs. A, B, & C. in Chapel.
M. E. 15 (FOUNDRY) for Ch. E. E. Lec. Rm.	CHEM. 19 (THEO. CHEM.) 19 Boynton H.	CHEM. 4 (ADV. IN-ORG.) for Ch. 19 Boynton H.	

WEDNESDAY, JAN. 21

M. E. 49 (GAS ENG.) for M. & E. M. E. Lec. Rm.	ECONOMICS 1 (E-tire Class) Chapel & Eng. Rec. Rms.	FRENCH 3, GERMAN 3, 19 Boynton H.	CHEM. 1 C. D. E., in Ch. Lec. Rm. Divs. A, B, in Phys. Lec. Rm. Divs. F, G, H., in E. E. Lec. Rm.
Ch. 25 (SANITATION) for C. & Ch. Chem. Lec. Rm.			

THURSDAY, JAN. 22

M. E. 38 (HYDRAU.) for M. & C. M. E. Lec. Rm.	M. E. 27 (KINE.) for M. & E. M. E. Draw. Rms.	PHYSICS 1 Phys. & Ch. Lec. Rms. & Phys. Rec. Rms.	MATH. 1 (ALG. & TRIG.) Divs. E, F, G. & H. in E. E. Lec. Rm. Divs. A, B, C, D. in Rm. 19, Boynton H.
M. E. 31 (THERMO) for E. M. E. Rec. Rm.	Ch. 10 (STEREOT.) for C. 18 Boynton H.	Ch. 5 (QUAL. ANAL.) for Ch. Ch. Lec. Rm.	
Ch. 21 (ORG. CH.) for Ch. Chem. Rec. Rm.	Ch. 11 (QUANT. ANAL.) for Ch. Ch. Rec. Rm. B.	Ch. 7 (QUAL. ANAL.) for E. E. & C. (b) Ch. Lec. Rm.	

FRIDAY, JAN. 23

E. E. 13 (THEO. OF ALT. CUR.) for E. E. E. Lec. Rm.	E. E. 9 (HIGHWAYS) for C. Rms. 18 & 19 Boynton H.	C. E. 1 (SURV.) for C. Rms. 18 & 19 Boynton H.	
E. E. 17 (LAB.) for M. E. E. Lab.	E. E. 4 (CALC. OF A. C.) for E. E. E. Lec. Rm.		
M. E. 30 (MCH. PARTS) for C. M. E. Draw. Rm.			
Ch. 14 & 39 (SAN. CH.) for Ch. & C. Chem. Lec. Rm.			

SATURDAY, JAN. 24

E. E. 14 (TRANS. & DIST.) for E. E. E. Lec. Rm.	M. E. 40 (STEAM ENG.) for M. & E. Chapel.
M. E. 29 (MCH. DES.) for M. M. E. Draw. Rms.	C. E. 7 & 8 (R. R.) for C. 19 Boynton H.
C. E. 15 (FR. STRUCT.) for C. Rm. 19 Boynton H.	
Ch. 30 (INDUST. CHEM.) for Ch. Ch. Lec. Rm.	

The following examinations will be given in advance of the examination period:

Wednesday, January 14, at 2 P. M. Chem. 17, (MINERALOGY) in Ch. Lec. Rm.

Friday, January 16, Chem. 27 (GAS ANALYSIS) in Chem. Lec. Rm.

Saturday, January 17, at 2 P. M. E. 16 (LAB.) for Electricies in E. E. Lab.

Monday, January 20, Chem. 41 (ORG. CHEM.) for Sanitary Civils in Chem. Lec. Rm.

## LAST BUSINESS SUCCESS MEETING

The series of meetings on Business Success has been the most successful ever promoted by the committee in charge of the Student Populans. The new plan for conducting these meetings has brought forth the unequalled commendation of students and faculty.

The meeting this week will be the last until after mid-years. It will also be the best from every standpoint. Considerable time will be given to Tech songs and cheers. The delegates to the Kansas City Convention will be on the platform and a preliminary report will be given by

Harland F. Stuart, leader of the Worcester delegation. At a later meeting a report will be given by the full team.

Other matters of importance to the student body will be brought to their attention during the first part of the meeting. But the big treat of the afternoon will be the speaker, Mr. Herbert N. Davison, Secretary of the Worcester Chamber of Commerce. No man knows so intimately the successful business in this city—or the reasons for their success—as he does. He will give us some inside facts that will be of intense interest to us.

Continued on Page 4

## Class Relays Tomorrow

The interclass relays are scheduled for tomorrow afternoon, at 4 P. M. A goodly number of candidates have been out, and a couple of close races are looked for. The Freshmen, who meet the Sophomores tomorrow, have Quimby, Francis, and Whitman as a mainstay of the team, while Moulton and Royal will cut up capers for their opponents. Quimby, Royal, and Moulton all look good for 'varsity material. The Juniors meet the Seniors at the same time, and the graduating class will have to hustle to beat them, as 1915 has the same team that won the cup last year with the exception of Bill Very. It looks as if the real competition for this cup, presented by F. W. Treadway, '90, would be between the Juniors and Freshmen. The deciding races will be next week Wednesday.

Prospects for a relay season are not so bright, due to lack of money in the Athletic Association treasury. Two or three races had been scheduled, but Manager Pike said last week that it was quite probable the races would have to be cancelled unless the men pay their own expenses.

## CALENDAR

TUESDAY—5.00 P. M. Meeting of Editorial Staff of the News.  
5.00 P. M. Mandolin Club Practice.  
6.00 P. M. Meeting of Bible Study leaders, Y. M. C. A. room.

WEDNESDAY—4.00 P. M. Interclass races on Board Track.  
5.00 P. M. Student popular.

THURSDAY—  
4.30 P. M. Wireless Association Meeting, Room 1, E. E. Building.  
5.00 P. M. Mandolin Club Practice.

FRIDAY—  
5.00 P. M. Glee Club Practice.  
5.00 P. M. Orchestra Practice.  
8.00 P. M. Tech Mixer.

SUNDAY—4.00-6.00. Dr. and Mrs. Hollis receive Tech men.

MONDAY—  
5.00 P. M. Physics Colloquium.  
5.00 P. M. Glee Club Practice.  
5.00 P. M. Orchestra Practice.  
6.45 P. M. Meetings of Bible Study groups.

EVERY DAY—  
Relay Team Practice.

## TECH NEWS

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Worcester Polytechnic Institute

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All communications should be addressed to Tech News, Worcester Polytechnic Institute.

All checks should be made payable to the Business Manager.

The Tech News welcomes communications but does not hold itself responsible for the opinions therein expressed.

All material should be in before Thursday noon at the latest in order to have it appear in the week's issue.

Entered as second class matter, September 21, 1910, at the postoffice at Worcester, Mass., under the Act of March 3d, 1879.

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Graphic Arts Building

## Editorials

¶ The relay team has been our most successful athletic venture in the last few years. Is it going to be so this year? Yes, if you men will only show a little school spirit and come out and run. Of course, there are some of you out now but there should be many more. It doesn't make any difference whether you have ever had any experience or not. It is your duty to the Institute to come out and try. Who knows but what you will show unexpected ability? Some of our best runners in past years were discovered in this way, so it follows that there are good chances of its happening again. Come now, be alive.

¶ We wish the new baseball captain all possible success. However no matter how hard he may strive for the success of the team, he can do nothing unless heartily supported by the whole school. This support can come in two ways. One is by every man, who has ever played baseball at all, coming out and trying for the team, and the other by every one, who has not paid their athletic dues, doing so immediately and thus giving much needed financial support to the team.

¶ Some time ago the Civil Society promised us a dance as evidence of their renewed life. Where is it?

### ROSS IS BASEBALL CAPTAIN

George Ross, 1914, of Kensington, Connecticut, was elected captain of the baseball team last Thursday noon. Captain Ross is a civil, and has played baseball for Tech for three years. He was star box artist the past two years. He was elected to fill Stickney's place, who was made captain last spring, but who did not return to school.

### PHYSICAL DIRECTOR NEEDED

An Appeal for Proper Physical Instruction at Tech

SEPTEMBER, 1915, IS TOO FAR AWAY

A number of our loyal alumni have subscribed a large sum of money—\$200,000—for a fine athletic field and gymnasium for the benefit of future classes. It is evident that these men—prominent engineers and business men of today—consider the physical side of a man's training to be an essential feature. In fact, we hear this sentiment expressed every day by our president, our professors, and the prominent men who address the student body. "A sound mind in a sound body" is too old a saying to require explanation.

Yet what facilities for physical training are offered today to the 535 students whose names appear on this year's register? The athletic association hires a football coach, under whose direction forty different students, at a rough estimate, learn more or less of football tactics. The coach is not required to be a trainer, however, and in thirty-five of these forty cases the men are not in physical condition once during the season. The athletic association also interests perhaps fifty students in cross-country running by offering a cup and a liberal award of numerals. Under proper supervision this is an excellent sport, but when indulged in by men ignorant of rules, of physical exercises, and training, is liable to do more harm than good. Competition for the school and class relay teams brings out perhaps thirty more men. Again, the athletic association supports a baseball team each spring, and thirty-five more men scamper around the diamond under the direction of a coach. But as in football, the track and baseball coaches are not trainers, and the condition of the men is far from what it should be.

The foregoing leads us to two conclusions. The first is that, allowing for men who enter two or more sports, not over 100 men, or less than one-fifth of the enrollment, get any physical exercise which may be termed from the school. As a matter of fact, these means of exercise are not furnished in the least by the Institute, but wholly by the athletic association, supported by the students.

The second conclusion is that those men who do enter athletics receive only a fraction of the value they should, not being under the supervision of a competent trainer. And yet the Institute—its president, its faculty, its alumni, and its friends—agree that a sound physical body is a prime requisite for an engineer.

What, we ask, is the answer to this problem? Unquestionably, it is the addition of a physical director to our force of instruction. Scarcely a high school, "prep" school, or college of any size or prominence exists without some position corresponding to this. To be sure, we

expect a physical director when the gym is completed, but why wait till then? That would mean wait until September, 1915, at the shortest. Why not have a physical director in September, 1914? Even without a gymnasium, such an instructor could accomplish much. He could see to it that each man put in a couple of hours of healthy exercise each week, as in tennis, outdoor basketball, running, swimming, skating, or one of the established branches of athletics. He could take charge of athletics, putting a system into the work, which is very essential to successful athletics as President Hollis's work in crew at Harvard will testify. He could give short courses in personal hygiene, and first aid, and give instruction in fencing, boxing, and wrestling to those interested.

A man capable of doing all this is an impossibility, someone has said. Not at all. A neighboring institution, the Springfield Y. M. C. A. College, has as the sole object of its main course the training of professional physical directors, men to fill just such a position as we have open here at Tech. The course of instruction there calls for two hours daily on whatever sport is in season—football, baseball, basketball, soccer, hockey, tennis, and so on, as well as much time spent in gymnasium work and in coaching teams, as public and Sunday School teams. The school sends out many men each year to fill responsible positions, and there seems to be no reason why Tech should not have a competent physical director next fall.

Signed,

"Enthusiast."

The W. P. I. test car has been sent to the Market Street car barns of the Worcester Consolidated Street Railway Co. for general overhauling and inspection preparatory to the use of the car by the seniors of the electrical course in their work on railway engineering.

Mr. S. A. Geer, ex-'12, has left his position as assistant in the Electrical Engineering Department of the Bay State Railway Company to accept a position as assistant to the chief of equipment, American Telephone and Telegraph Co., Pawtucket, R. I.

## TANGO CLASS

Miss Ruby H. Day

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## CHEMISTRY DEPARTMENT THESIS SUBJECTS

The following thesis subjects are offered by members of the Faculty of the Chemistry Department, for the Senior chemists:—

By PROFESSOR JENNINGS

1. A Comparative Study of Ethers and Acetals of primary, secondary and tertiary alcohols and the influence which the presence of halogens and other negative groups have on their formation.
2. A Study of the Dennstedt Method of Combustion.
3. Study of the Action of neutral amalgams as polymerizing and Reducing agents for aldehydes.

By PROFESSOR BONNET

1. A Study of the Corrosion of Iron and Steel with especial reference to such which is embedded in cement, concrete, or other rust inhibiting substances in the presence of electrolytes which aid corrosion.
2. Detection and Estimation of Small amounts of  $H_2S$  by oxidation to  $H_2SO_4$  precipitating as  $BaSO_4$  and determining by means of nephelometer.
3. A Search for a simple, rapid and accurate method for determining phosphates in surface water.
4. (a) The Value of Sealed glass tubes containing a solution of Bleaching Powder for the immediate sterilization of small quantities of drinking water.  
(b) The Use of "Permutite" for water softening.

By PROFESSOR SWEETSER

1. A Study of the Methods for the Determination of Sulphur in Iron and Steel.
2. The Determination of Lead, Antimony and Tin in Alloys.
3. The analysis of Medicinal Spring Waters.
4. A Study of the Methods for the Determination of Glycerine.
5. The Separation and Determination of Nickel by the Dimethylglyoxime Method.
6. The Use of Lactose-broth and Lactose-bile as a Presumptive Test for the Colon Bacillus and a Comparison of Nutrient Gelatine and Nutrient Agar for the Determination of the number of Bacteria Developing at  $20^\circ C$ .

By PROFESSOR CALHANE

1. A Study of the time factor in Electro analysis using direct current and rectified alternating current.
2. A Study of the Arsenite and Thio-sulphate methods for the determination of electrolytic  $NaOCl$ .
3. A Study of the conditions giving the best efficiency in the electrolytic oxidation of oxalic acid.
4. Further improvement and extension of the uses of the Electric Furnace—that has been developed in the past few years in this laboratory.
5. A Study of some of the latest proposed processes for obtaining soluble Barium salts as  $BaO_2H_2$  from  $BaSO_4$ .

By H. R. POWER

1. A Study of the relation between the leucocyte count and the content of fat and total solids in milk.
2. The application of the Abbé Refractometer to the Determination of Fat in Ice Cream.
3. The Determination of Lead and Tin in Canned Foods.

4. The Effect of Essential Oils on the Refractometric determination of alcohol.
5. Free ammonia and its Relation to Pasteurized and Unpasteurized Milk.  
Dr. Briggs offers a variety of subjects in the field of Colloid Chemistry and Photochemistry, including such topics as the "Coloring of Metals," "The Study of Emulsions and Emulsification." In photochemistry, interesting problems having to do with the photographic plate are proposed as topics for study. Dr. Briggs also includes in his list a number of interesting problems in Theoretical and Applied Colloid Chemistry.

## TECHNICALITIES

Prof. Carl D. Knight has obtained two 750-watt nitrogen-filled tungsten lights from Westinghouse Electric & Mfg. Co., for exhibition. One of the lamps is installed in the electric laboratory near the instrument room. These lamps have efficiency of about  $\frac{1}{2}$  watt per candle, making each of the lamps 1500 candle power.

Clinton D. Smith '12, Wallis C. Watson '10, Arthur C. Burleigh '13, and Prof. A. L. Cook '01, were back to visit the Institute during the Christmas holidays.

The Civil Engineering department has recently purchased six volumes of the "Engineering Magazine" which complete the file of this periodical.

The American Bridge Co. has furnished all senior civil engineers with valuable hand books entitled, "Specifications and Tables for Steel Framed Structures."

F. A. Garnsey '16, who was recently operated on for appendicitis, is improving finely, and expects to be back after mid-years.

Prof. D. L. Gallup, Professor of Gas Engineering, attended the meeting of the Automobile Association held in New York City during the past week. At one of the sessions, Professor Gallup presented the results of several years testing and research work, in a paper entitled "Automobile Effectiveness." Professor Gallup was recently elected to the chairmanship of the Research Committee of the Society of Automobile Engineers.

By invitation of Mr. John W. Higgins, W. P. I., '96, President and Treasurer of the Worcester Pressed Steel Co., Mr. John Jernberg, Instructor in Forge Practice, accompanied by his class of sophomore electricians visited the works last Wednesday afternoon.

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## BUSINESS SUCCESS

(Continued from page 1)

He comes to us at a great deal of personal sacrifice of time and strength as this is the year in which he has had charge of all the work involved in the doing away with the old Board of Trade and bringing about the organization of the Chamber of Commerce into which the Merchants' Association has also just recently been merged.

In accepting the invitation of the committee to address this meeting Mr. Davison wrote:

"I desire to acknowledge receipt of your invitation to address the students of the Polytechnic Institute on the subject of 'Business Success,' and although I have steadily avoided as far as possible making engagements of this sort, I am going to make an exception in your case. I am doing so because I feel profoundly honored by the invitation you have extended me, and if you will try to secure an attendance of the students sufficiently large so that we can have as many phases of the student life as possible represented at this meeting, I will try to bring them a message that will interest them."

The following are a few of Mr. Davison's achievements:

Mr. Herbert N. Davison, who has been for the past five years General Secretary of the Worcester Chamber of Commerce and its predecessor, the Worcester Board of Trade, is a native of Manchester, N. H., and is a newspaper man by profession. He is probably one of the most widely known men in commercial organization work in this country. For the past three years he has been the Eastern Director of the American Association of Commercial Executives, an international organization of secretaries, and is the author of the Constitution and By-Laws under which that body works. He was for two years President of the New England Association of Commercial Executives. He was the Recording Secretary of the Conference at Washington which formed the Chamber of Commerce of the United States of America, and was the author of the perfecting amendments at Chicago which fixed the dues of that body. In his commercial work he has been brought into intimate contact with more than one thousand business bodies in this country and Canada.

## CHARLEY'S COLUMN

Inter-class Relay Races for the Class of 1890 cup are on the boards this week.

Freshman-Sophomore and Junior-Senior, Wednesday.

Finals Friday.

The Juniors are favorites with Warren, Miller, and Russell of last year's victorious team out again, and Davidson, Halliwell and Bent trying for a berth.

Win Reed and Dick Keith are speedy men for the Senior team and will make the going fast with proper support.

The Sophomores have two good men in Royal and Win Moulton, and Cleveland takes to the boards like a veteran.

Quimby, Francis, and King are making fast time and the Freshmen have a good chance of taking their rival's measure.

The dopsters will get a line on the makeup of the varsity team from this week's running.

From the present indications Tech is going to have a wealth of distance men this spring. Captain Keith, Hugo, Gerald, Francis, and Quimby are keeping in condition this winter.

## CIVIL ENGINEERING SENIOR THESES

Allardice, Griffin: Study of the use of pipe in structural work.

Bergwall: Comparative design of earth and masonry dams.

Berry: Design of brick and timber manufacturing building.

Carlson: Study of dust particles in air of heating plants.

Crandon, Hubbell: Elimination of a grade crossing.

Fritch: Economic design of rotating walls.

Gilmore, (A. P. Nutter): Temperature effect on physical properties of steel.

Glover, Jencks, R. J.: Design of water works for Sterling, Mass.

Hedlund: Study of aeration of drinking water.

Howard, Parker: Design of steel and reinforced concrete standpipes.

Hughes: Design of through, plate girder, railroad bridge.

Jenks, H. E.: Study of failures of masonry dams.

Jones: Study of methods of railroad valuation.

Keith: Design of steel trestle for railroad.

Kendall: Design of reinforced concrete manufacturing building.

Knowlton: Study of failures of reinforced concrete structures.

Purrington, Whitlock: Testing current meters.

Rich: Design of pin connected railroad bridge.

Ross: Design of through, riveted highway bridge.

Sawyer: Design of deck, riveted highway bridge.

Tilton: Design of Imhoff tank.

## TECHNICALITIES

From the posted list of suggested subjects for theses for the students of the electrical department, the following seniors have elected theses for the second half of the college year: William C. Blanchard, Jr., Comparison of methods of train lighting with electricity; F. W. Eaton, Electrification of Pittsburgh steel mills; Robert E. Hancock, Design and construction of a test room for illumination; Yi Chi Mei, Investigation of some alternating-current phenomena dependent on the presence of harmonics in electromotive force or current, with special reference to characteristics of silicon-steel single-phase transformers; Nels A. Nelson, A study of brake-shoe pressure, with particular attention to its relation to brake-cylinder size and pressure; Gilbert S. Vernam, Development of quick workable curves for transmission-line data; Sih-zung Yang, Study of a rotating-field motor. The theses of Mr. Blanchard, Mr. Nelson, and Mr. Vernam are under the immediate supervision of Prof. Albert S. Richey; that of Mr. Hancock is under Prof. Carl D. Knight; that of Mr. Eaton is under Mr. Walter D. Stearns; that of Mr. Mei is under Dr. C. A. Pierce; and the thesis of Mr. Yang is under the immediate supervision of Prof. Harold B. Smith. Thesis is an elective subject in the electrical department; the students are given the privilege of substituting an equivalent number of hours of lecture work in the place of thesis. Six students of the senior class in the electrical course elected thesis this year; Mr. Vernam is registered in the General Science course, but elected to do his thesis in an electrical subject.

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## RIFLE SHOOT

(Continued from Page 1)

failed to qualify. The results were immediately sent to Washington, where scores will be compared and the winner announced. The team will shoot its second match this evening, the University of Pennsylvania being the opponent.

The unofficial qualifying scores follow:

	Standing	Prone	Total
C. S. Darling '17,	88	97	185
G. N. Davidson, '15	86	92	178
M. M. Smith, '15	84	94	178
C. F. Fritch, '14	83	94	177
S. G. Leonard, '14	88	86	174
Team Total			892
Those not qualifying:			
H. H. Watson, '15	76	94	170
P. C. Mirick, '17	65	91	156
W. K. Jealous, '16	83	68	151
E. L. Bragdon, '16	62	79	141
G. E. Gay, '17	62	69	141

## GLEE CLUB AND ORCHESTRA PERFORM

## FIRST OF A SERIES OF CONCERTS

On Wednesday evening the Tech glee club and orchestra gave a concert at the Barret and Snow Annual Agency Banquet held in the State Mutual Restaurant. During the dinner the orchestra played while the glee club sang the latest popular pieces; after dinner a specially prepared program was rendered.

This was the first of a series of concerts which the Musical Association has scheduled. On the afternoon of January 17 the glee club will sing at the Textile Banquet which is to be held in the Bancroft; on January 30 both orchestra and glee club will journey to West Boylston to perform at a dance given by the Chamber of Commerce; on February 13 both organizations are to appear in a cabaret show held in Mechanics Hall; and some time in the spring the Chamber of Commerce is to give a minstrel show in which both clubs will take part. It is also planned, if arrangements can be made, to give a joint concert with the Clark College Musical Association.

## Y. M. C. A. NOTES

The ten delegates from Worcester to the Kansas City Student Volunteer Convention reached home Tuesday, 11 P. M. One of the seven Tech delegates—Sidney Swallow '15—remained behind in Kansas City to recuperate from an attack of the grippe which came onto him two days before the close of the convention. He is stopping at the home of Mr. E. D. Bigelow, 3715 Baltimore Ave., Kansas City, Mo. Mr. Bigelow was chairman of the local committee that made arrangements for the entertainment of the 7,000 delegates at the convention.

Watch next week's News for a report of the Convention.

Tech Mixer Friday of this week. The well known Schubert Quartet.

Cabinet Meeting, Wednesday, 6.45 P. M.

The Bible Study groups will discontinue their weekly meetings until after mid-years. Every member of these groups will find it helpful to continue the daily readings during the interim.

Many letters have been received from friends congratulating the calendar committee on its work. The committee was composed of Douglas F. Miner '15, O. Nelson Hollis '17, and George P. Halliwell '15.

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### VISIT FROM FOREIGN PROFESSOR

The Chemical Laboratories were visited recently by Prof. Jose Grau Guinart of Madrid, Spain. Professor Guinart is a member of the faculty of the Technical School at Madrid and Inspector of the Municipal Laboratory of the same city. Professor Guinart is over on a tour of inspection of the leading Technical Schools of the country, particularly with reference to the chemical laboratories. He was accompanied by Father Schwickerath, Professor of History and Philosophy at Holy Cross College. Father Schwickerath acted as interpreter, as Professor Guinart does not speak English.

The Institute has just installed in the foundry a system of 500-watt tungsten incandescent lamps.

### W. P. I. REPRESENTED AT A. I. E. E. MEETING

Dr. C. A. Pierce and Mr. G. I. Gilchrist, of the electrical department, attended the third meeting of the Boston section of the American Institute of Electrical Engineers which was held in the auditorium of the Engineers Club. Before the lecture of the evening, a dinner was served at the Club for the members of the Institute and their guests. The address was given by Mr. B. A. Behrend, on "A great engineering disaster and the lessons learned therefrom." The meeting was a joint meeting of the American Institute of Electrical Engineers, the American Society of Mechanical Engineers and the Boston Society of Civil Engineers.

### TECHNICALITIES

The electrical department of the Institute closed for the Christmas holidays on the afternoon of Dec. 23. The members of the department spent the vacation in various ways. Prof. Harold B. Smith spent several days in Pittsburgh in connection with consulting work for the Westinghouse Electric & Manufacturing Co.; Prof. Joseph O. Phelon remained in the city, devoting part of the vacation to experimental work; Prof. Albert S. Richey visited his father who resides in Munsie, Indiana; Prof. Carl D. Knight remained in the city devoting part of the vacation to the completion of laboratory directions for the Junior students to use during the second term of the year; he also supervised the overhauling and reconstruction of the laboratory apparatus that is to be used in the second term; Dr. C. A. Pierce remained in the city, working on the text book that he is preparing for use in colleges of engineering; Mr. Walter D. Stearns went to New Hampshire for a week end; he also oversaw the fitting up of the W. P. I. test car for the use of the senior students during the second half of the college year; Mr. Raymond L. Witham remained in the city; Mr. George I. Gilchrist remained in the city, purifying and filtering the oil that is to be used in the new 600,000 volt transformer that is under construction by the department; Mr. Harry Lindsay spent a week end in Boston; he also calibrated some shunts that have been made by the department for current measurement.

G. I. Gilchrist '12, and E. K. Brown '12, under the direction of Professor Gallup, are at present engaged in running tests on automobiles to determine the transmission and tire losses.

Mr. Luy Trott, of Tech Chemistry Class, 1908, was a recent visitor to the Chemical Department. Mr. Trott is Superintendent of the Dougall Varnish Co., at Montreal.

Among those attending the recent annual meeting of the New England Federation of Harvard Clubs at Exeter, N. H., were Dr. Homer Gage, former President of New England Federation of Harvard Clubs and Professor Jennings, President of Worcester Harvard Club.

Mr. A. C. Gowing, '12, who has been connected with the electrolysis work of the Bay State Street Railway Company, has accepted a position in the testing department of the Boston Edison Company.

Mr. Edward A. Hanff, '10, and Mr. William R. Coley, '11, were in the city for the Christmas holidays and to visit the Institute.

It is of interest to note that Nathan C. Avery, ex-'15, who is now attending Sheffield Scientific School at Yale, is at present one of the squad of fifteen men from which the varsity basket squad will be chosen. The squad started with some sixty men.

### RELAY CHALLENGE

Now that the relay season, on the outdoor track is about to come into full swing, considerable interest is being shown among the divisions in which there are lovers of that sport as to some division races. This surely is a fine idea and it is hoped that several meets will be run off, for it may be the means of bringing out some "dark horses" as well as training those already out for the varsity squad.

It is understood from good authority that division D, Junior Chemists, are already getting up a challenge against any division on the hill. Get after them; if they do. Although not official, it is also understood that "Nemo" Drake is the one to see.

### PROFESSOR BUTTERFIELD ENTERTAINS

The Sophomore Chemists were entertained last Friday evening at the home of Prof. and Mrs. Arthur D. Butterfield on Schussler Road. The evening was enjoyably spent in playing games, singing college songs and indulging in the bounteous refreshments served by the hostess.

Professor Butterfield, who has the sophomore chemists in Calculus, showed his interest in the new rifle club by providing rifle practice during the evening. It is rumored that from the keen competition showed that some of the chemists will soon make the rifle team. (?) Brownell is said to be a likely candidate.

### BAND LEADER INJURED

As a result of a fall, Harold B. Stutsman '16 of Melrose is now nursing a fractured wrist, which although not serious is exceedingly painful. "Stutsy" was skating backwards at Elm Park last Thursday afternoon and when traveling at a rather fast rate, struck something which caused the coefficient of friction between steel and ice to rapidly increase thus decreasing his speed and precipitating him to the pond's surface with terrific force. The results of the fall were not noticed at first; but later in the day his arm became very painful, necessitating his going to the hospital, where, by the aid of several doctors, the fracture was reduced.